

Electronic Programmable Heat Pump Thermostats



HP75-1 with integral sensor HP75A-1 with remote sensor

SETTING INSTRUCTIONS

SETTING THE CLOCK

After the recessed **RESET** button has been pressed the display appears as shown, with the colon blinking and all the factory pre-set conditions will be present.



The clock is a 24 hour type. To change to a 12 hour type with am/pm indication press and hold down the 'NEXT' and 'DAY' buttons until the display changes. (Repeat to change back to 24 hour mode).



The control temperatures are shown in °C but can be changed to display °F if this is preferred. To change, press and hold down 'DAY' and 'COPY' buttons until the display changes.

To set the clock to the correct time and day, press and release the button marked **PROG**. The digits blink. Press the **DAY** button (the digits stop blinking) until the correct day number is shown. (1 = Monday). To change the time quickly in ten minute steps press and hold down the + or - buttons.

To change the time one minute at a time press and release these buttons. When the time is correct press **PROG** to start the clock and continue setting sequence.

SETTING THE EVENT TIMES & TEMPERATURES

The HP75 can be set by the installer to provide either 2 or 6 events each day. Refer to the installer setting instructions if this parameter needs to be altered. Please note that for simplicity the diagrams in this setting instruction assume that the unit has been set in the "6 events per day" mode.

The first event (time and temperature) is displayed, together with the day or days when it is active. Note that the day number(s) displayed will be that of the current day. In 7 Day mode only a single day number will be displayed, in 5/2 Day mode either 12345 or 67 will be displayed.

To go through the available events press and release the **NEXT** button. While each event is on display, it may be altered as required.

Selecting an event time

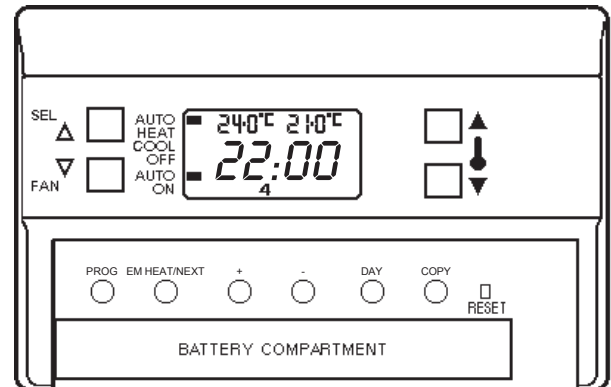
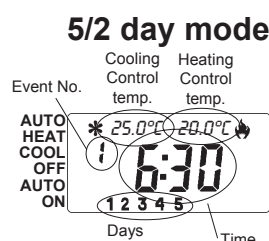
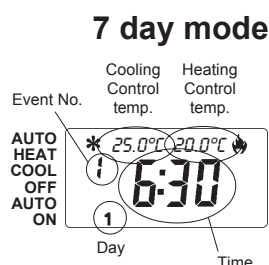
Press and hold down the + or - buttons to change the event time in ten minute steps. Press and release to change by one minute.

Selecting a heating temperature

Press and release the ▲ button to raise the HEATING control temperature by 0.5°C (1°F), or press and release the ▼ button to lower the HEATING control temperature by 0.5°C (1°F). Press and hold down these buttons to make larger changes to the control temperature.

Selecting a cooling temperature

Press and release the △ button to raise the cooling control temperature by 0.5°C (1°F), or press and release the ▽ button to lower the cooling control temperature by 0.5°C (1°F).



Selection of an 'OFF' event

If there is a demand to turn 'OFF' rather than turn down the heating or turn up the cooling, for example during unoccupied periods, an 'OFF' event can be selected.

Selecting a programmed "Off" event for heating: use the ▼ button to lower the heating set temperature to its minimum value which is "Off", the characters "Of" will replace the heating control temperature.

Selecting a programmed "Off" event for cooling: use the △ button to raise the cooling set temperature to its maximum value which is "Off", the characters "Of" will replace the cooling control temperature value.

When all events for the day(s) on the display are as required, press **DAY** to show the following day's events.

The display will appear similar to one of the diagrams on the right, depending on whether the HP75 has been set up for 7 day or 5/2 day mode.

Use the +, -, ▲, ▼, △, ▽ **NEXT** buttons to alter the events as required,

OR

If the previous day's programme is to be repeated, press **COPY** to repeat those events with just one button press.

(Pressing **COPY** when in 5/2 mode will repeat the events programmed for days 1 to 5 on the weekend).

Use the **DAY** and **NEXT** buttons to check all the programmed events, using the +, -, ▲, ▼, △, ▽ buttons to make changes to each event as necessary.

TO EXIT THE PROGRAMMING MODE

When all the events for every day are as desired, press **PROG** to return to RUN mode with the colon blinking.

The heating/cooling system will now be controlled to provide the programmed temperatures.

Refer to USER GUIDE for details of manual overrides available in day to day operation.



Setting record for thermostat set for six events each day

Event Numbers												
Format	1		2		3		4		5		6	
	CLG	HTG	CLG	HTG	CLG	HTG	CLG	HTG	CLG	HTG	CLG	HTG
Pre-set programmes, Monday to Friday												
	25.0°C	20.0°C	27.2°C	15.0°C	25.0°C	20.0°C	27.2°C	15.0°C	25.0°C	20.0°C	27.2°C	15.0°C
	6:30		8:30		11:30		13:30		16:30		22:30	
Actual User Settings, Monday to Friday												
1 (Monday)												
2 (Tuesday)												
3 (Wednesday)												
4 (Thursday)												
5 (Friday)												
Pre-set Programmes, Saturday & Sunday												
	27.2°C	20.0°C	27.2°C	20.0°C	25.0°C	20.0°C	25.0°C	20.0°C	25.0°C	21.1°C	27.2°C	15.0°C
	7:30		9:30		11:30		13:30		16:30		22:30	
Actual User Settings, Saturday & Sunday												
6 (Saturday)												
7 (Sunday)												

If the unit is to operate in 5/2 day mode, then only days 1 and 6 need be completed.

NOTES ON SETTING EVENT TIMES

(Assumes unit is in 6 events/day mode)

If, during the event checking and setting procedure, no buttons are pressed for more than two minutes then the HP75 will return to RUN mode automatically. If this appears to have occurred, it is advisable to re-check the program to ensure that it is as required.

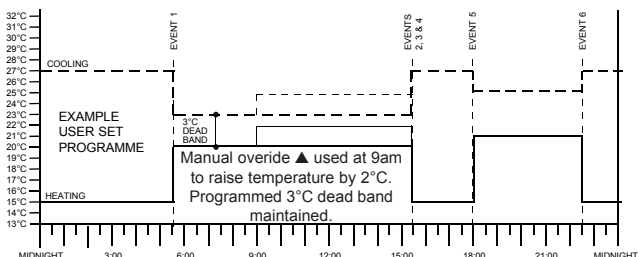
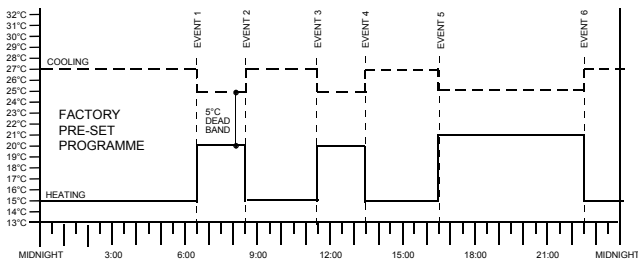
When setting event times and temperatures it is not possible to set event times out of chronological order.

Event 1 may be set at any time from 0:00AM to 11:59PM (but would normally be in the morning).

Event 2 may be set at any time between event 1 and 23 hours, 59 minutes after event 1.

Event 3 may be set at any time between event 2 and 23 hours, 59 minutes after event 1.

Event 4 may be set at any time between event 3 and 23 hours, 59 minutes after event 1,.... and so on.



Setting record for thermostat set for two events each day

Event Number				
Format	1		2	
	CLG	HTG	CLG	HTG
	Time		Time	
Pre-set programmes, Monday to Friday				
	25.0°C	21.1°C	Off	15.0°C
	8:30		17:30	
Actual User Settings, Monday to Friday				
1 (Monday)				
2 (Tuesday)				
3 (Wednesday)				
4 (Thursday)				
5 (Friday)				
Pre-set Programmes, Saturday & Sunday				
	Off	Off	Off	Off
	8:30		17:30	
Actual User Settings, Saturday & Sunday				
6 (Saturday)				
7 (Sunday)				

If the event time being set is moved past midnight into the following day then the number of the following day will blink.



Event 6 on day 6 set after midnight.

When using the + button to adjust events 1 to 5 and the event time being adjusted becomes the same as the following event time, then both are changed simultaneously. This applies to all subsequent event times reached and is demonstrated in the diagram on the lower left.

When using the - button to adjust events 2 to 6 and the previous event time is reached the - button ceases to respond.

The factory pre-set programme may be reinstated by pressing the recessed RESET button. This will however reinstate all the factory pre-set conditions so that the clock type and temperature scale may also have to be re-set.

In the diagram opposite, event 2 has been moved to 3:30PM. Note that events 3 & 4 have also been moved to that time and that the following control temperature will be that of event 4.

It is possible to move events past midnight into the following day when the day number will blink in the display, see the display diagram in the notes on setting event times.

Electronic Programmable Heat Pump Thermostats



HP75-1 with integral sensor HP75A-1 with remote sensor

USER'S GUIDE

How to:

Select a 12 hour or a 24 hour clock display.

Select a °F or a °C temperature display.

Change between Standard Time and Daylight Savings Time at the press of a button.

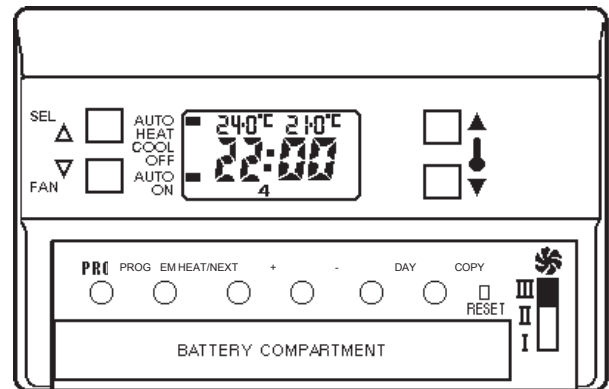
Convert the HP75 to act as a thermostat, controlling at the selected temperature continuously (Heating Mode or Cooling Mode, not both).

Use the HP75 as a frost protection thermostat.

Use the holiday function.

Override the programmed temperature.

Select emergency heat mode.



RUN MODE

While the HP75 is in RUN mode, i.e. controlling the space temperature in accordance with the program, the colon between the hours and minutes digits blinks. The colon does not blink while the time and program are being set.



Fig. 1.
Display following a RESET. - RUN mode. (Colon blinking)

SELECTING THE CLOCK TYPE 12hr (AM/PM) or 24hr

The factory pre-set clock has a 24 hour display. If a 12 hour display with am/pm indication is preferred then press and hold down the **NEXT** and **DAY** buttons until the display changes. (Repeat to return to 24 hour mode).



Fig. 2.
Clock set to 24 hour (AM/PM) display.

SELECTING THE TEMPERATURE DISPLAY (°F or °C)

The factory pre-set temperature display is °C. If a °F display is preferred then press and hold down the **DAY** and **COPY** buttons until the display changes. Repeat to return to a °C display.



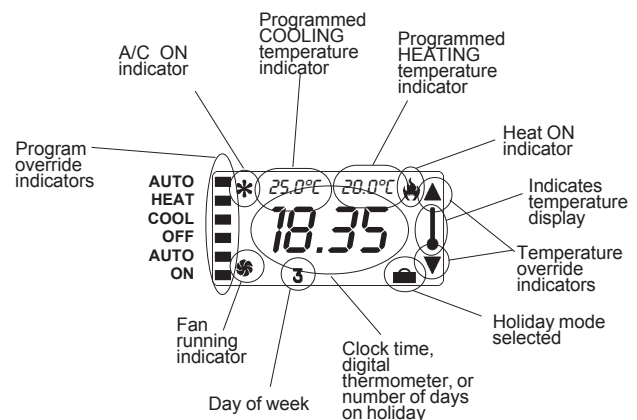
Fig. 3. Temperature range changed to Centigrade.

SETTING THE CLOCK

Press **PROG** to display the time of day on its own (the display blinks). Press **DAY** (the display stops blinking) to select today (1 = Monday, 6 = Saturday etc). Press and hold down the + or - button to change the time quickly in ten minute steps or press and release to change the time by one minute.

DISPLAY ELEMENTS

(Those that will appear while following this instruction).



When the day and time are correct, press and release **PROG** once to start the clock and further press and release again until the colon starts blinking, (RUN mode.) The intermediate stages are explained in the Setting Instructions.



Fig. 4. Clock time ready for changing.
(Colon steady, digits blinking).

STANDARD TIME / SUMMER TIME CLOCK

When the clocks are changed from Summer Time to Standard Time (or vice versa) just press and hold down the - button to change from Summer Time to Standard Time or the + button to change from Standard Time to Summer Time. The first time this is done (after a RESET) the clock is set and can only be changed by one hour as appropriate.

If a mistake is made, e.g. pressing the + button in the autumn when the - button should have been pressed, rectify the problem by pressing the correct button and then re-setting the clock by one hour as appropriate. (Refer to SETTING THE CLOCK).

TIME OR TEMPERATURE DISPLAY

The default display in RUN mode shows the time of day. This may be changed to display the actual temperature being sensed by pressing both **COPY** and **NEXT** buttons simultaneously. Return to time display by pressing them simultaneously again.

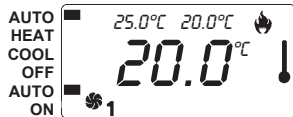


Fig. 5.
Temperature Display. (Space temperature is below the set temperature, so the heating system and fan are operating).

THERMOSTAT MODE

The HP75 can be converted to control either heating or cooling, (not both), at a constant user selected temperature by selecting "Thermostat mode". To do this, press and hold down both **▲** **▼** buttons until the display changes to that shown in fig. 6. When entering thermostat mode the default setting is heating only, with a default temperature of 8°C (46°F), this can be changed as required by pressing either **▲** or **▼** until the require temperature is displayed.

To control at a constant cooling temperature (heat off), press the 'SEL' button to select 'COOL', the temperature will be shown as 28°C (82°F) (fig. 6a) use the **▲** and **▼** buttons to select the required temperature. When in thermostat mode if "OFF" is selected by means of the **△** button, both heating and cooling are turned off.

To return to normal programmed operation, press and hold both **▲** and **▼**.

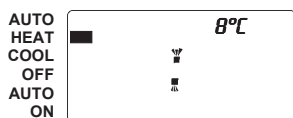


Fig. 6. Thermostat mode (Heating)

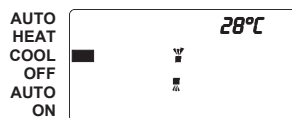


Fig. 6a Thermostat mode (Cooling)

FROST PROTECTION MODE

While in thermostat mode the HP75 may be set to guard against possible frost damage in areas where the unit (or its remote sensor) is installed. The heating control temperature may be set to a suitable level using the **▲** and **▼** pressed simultaneously.

VACATION MODE - HEATING ONLY OR COOLING ONLY

While in thermostat mode with either HEAT or COOL selected, pressing the **DAY** button will activate the holiday mode. The display will change to that shown in Fig. 7 or Fig. 7a with a number indicating the default holiday period of 00 days. Use the **+** or **-** buttons to set the number of days required, in the range 1-99 days. If the number of days is left at 00 then the unit will return to normal at event 1 the following day. When the selected number of days have elapsed the unit will automatically return to normal, controlling temperatures to the set programme.

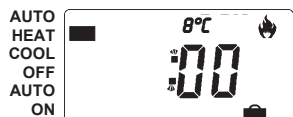


Fig. 7 - Heating

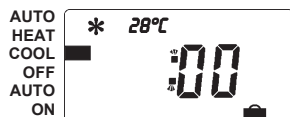


Fig. 7a - Cooling

Control may also be restored to normal before all days have elapsed by pressing the **▲** and **▼** simultaneously.

USER OVERRIDES

While the unit is operating normally in RUN mode the following overrides are available:

TEMPERATURE SETTING OVERRIDE

Press **▲** to increase or **▼** to decrease the current set temperatures. Each press will change the temperature settings by 0.5°C (or 1°F). To make larger changes press the button and hold it down. The temperatures can be raised until the cooling setpoint reaches 36°C (97°F) or lowered until the heating setpoint reaches 5°C (41°F). Note that the programmed dead band between the heating and cooling temperatures is maintained while the override is being used. (Fig. 8 & Fig.9).

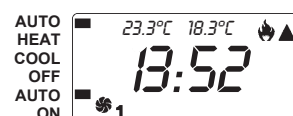


Fig. 8.
Temperature raised - heating system & fan running.

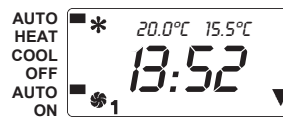


Fig. 9.
Temperature lowered - cooling system & fan running.

PROGRAM OVERRIDE

While running in **AUTO** mode both the heating system and cooling system will be switched on and off to maintain the selected temperatures.

The **SEL** (select) button can be used to select one of three other modes (See Fig. 10).

With **HEAT** selected only the heating system will be controlled, the cooling system being switched off.

With **COOL** selected only the cooling system will be controlled, the heating system being switched off.

With **OFF** selected both heating and cooling will be switched off, except that the HP75 will switch on the heating system should the space temperature being sensed fall below 5°C (41°F).

FAN OVERRIDE

Pressing the button marked **FAN** will change the fan mode between **AUTO**, **ON** and **SMART FAN**.

AUTO: Thermostat starts fan when there is a demand for either heating or cooling. Note: If the installer has selected "Fossil Fuel Aux. Heat", the fan is controlled by the warm air heater whenever there is a call for auxiliary heating.

ON: Fan runs continuously.

SMART FAN: Fan runs continuously during events 1-6 unless a programmed "Off" is encountered, but reverts to Auto mode during event 6-1. When in "Smart Fan" mode, the bar on the display adjacent to **FAN ON** will flash.

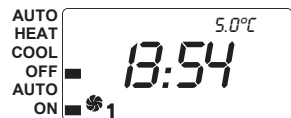
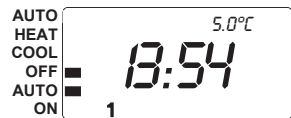
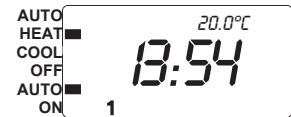


Fig. 10

SELECTING EMERGENCY HEAT MODE

The EM HEAT button beneath the flap can be used to select the "Emergency Heat" mode. When selected the heat pump will be turned off and all heating will be provided by the auxiliary heating stage. An "E" in the display will flash until the unit is returned to normal operation (See Fig.11). To restore the system to normal heat pump operation press the EM HEAT button, then SEL button three times to return the unit to the AUTO mode.

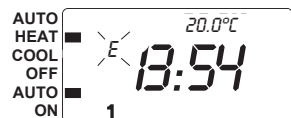


Fig.11

BATTERY MAINTENANCE

It is recommended that high quality alkaline batteries are used.

New batteries will provide the power for switching the outputs on and off for approximately 2 years. When the batteries' voltage drops to the minimum level needed to maintain operation, a battery symbol will blink in the display (See Fig.12). When this symbol appears both batteries should be replaced with high quality alkaline cells. Operation will continue normally until the 15th midnight after the symbol started blinking and then the unit will switch off all outputs and shut down with just the time and the blinking battery displayed. While the battery symbol is still blinking, the old batteries may be removed and new batteries placed in the sleeve and inserted **within one minute**. Internal circuitry will maintain the user set program during this period.



Fig. 12.
Blinking battery symbol, change batteries.



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